

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

TRANSMITTAL  
FORM

(to be used for all correspondence after initial filing)

Application Number	10/575,447
Filing Date	with an effective filing date of October 13, 2004
First Named Inventor	Christian MULLER et al.
Group Art Unit	
Examiner Name	Fax: (571) 273-8300
Total No. of Pages in this Submission: 6	Attorney Docket Number NITROF P85AUS

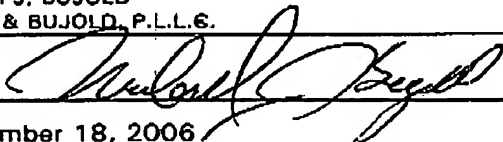
RECEIVED  
CENTRAL FAX CENTER  
SEP 18 2006

## ENCLOSURES (check all that apply)

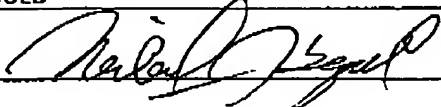
- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Fee Transmittal Form<br><input type="checkbox"/> Fee attached<br><input type="checkbox"/> Amendment/Response<br><input type="checkbox"/> After Final<br><input type="checkbox"/> Affidavits/declaration(s)<br><input type="checkbox"/> Extension of Time Request.<br>(in Duplicate)<br><input type="checkbox"/> Express Abandonment Request<br><input type="checkbox"/> Information Disclosure Statement<br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><input type="checkbox"/> Response to Missing Part/s Incomplete Application<br><input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Assignment papers (for an Application)<br><input type="checkbox"/> Drawing(s)<br><input type="checkbox"/> Licensing-related Papers<br><input type="checkbox"/> Petition Routing Slip (PTO/SB/69) and Accompanying Petition (DELETED - no longer useful)<br><input type="checkbox"/> To Convert a Provisional Petition<br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><input type="checkbox"/> Terminal Disclaimer<br><input type="checkbox"/> Small Entity Statement<br><input type="checkbox"/> Request for Refund | <input type="checkbox"/> After Allowance Communication to Group<br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)<br><input type="checkbox"/> Proprietary Information<br><input type="checkbox"/> Status Letter<br><input checked="" type="checkbox"/> Additional Enclosure(s) (please identify below):<br>Submission of Translation of Written Opinion of the Int'l Searching Authority<br>Written Opinion of Int'l Searching Authority |
|--|---|---|

REMARKS

## SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual Name	Michael J. BUJOLD DAVIS & BUJOLD, P.L.L.C.	Reg. No. 32,018 CUSTOMER NO. 020210
Signature		
Date	September 18, 2006	

## CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to the USPTO on September 18, 2006	
Type or printed name	Michael J. BUJOLD
Signature	 Date: September 18, 2006 (lfb)

SEP 18 2006

9/18/06

PATENT APPLICATION

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of : Christian MULLER, Jean-Louis DUPIN and  
Jean-Claude HEITZLER  
Serial no. : 10/575,447  
Filed : with an effective filing date of October 13, 2004  
For : DEVICE FOR GENERATING A THERMAL FLUX  
WITH MAGNETO-CALORIC MATERIAL  
Group Art Unit :  
Examiner :  
Docket : NITROF P65AUS

The Commissioner for Patents  
U.S. Patent & Trademark Office  
P. O. Box 1450  
Alexandria, VA 22313-1450

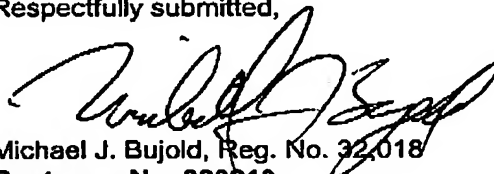
**SUBMISSION OF ENGLISH TRANSLATION OF  
WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY**

Dear Sir:

Enclosed please find an English translation of the Written Opinion of the International  
Searching Authority concerning the above-identified application. Please enter the same into  
the record of this case.

In the event that there are any fee deficiencies or additional fees are payable, please  
charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,



Michael J. Bujold, Reg. No. 32,018  
**Customer No. 020210**  
Davis & Bujold, P.L.L.C.  
112 Pleasant Street  
Concord, NH 03301-2931  
Telephone 603-226-7490  
Facsimile 603-226-7499  
E-mail: [patent@davisandbujold.com](mailto:patent@davisandbujold.com)

RECEIVED  
CENTRAL FAX CENTER

SEP 18 2006

PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

Translation

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference <b>BR 18477 / IN</b>		Date of mailing (day/month/year) <b>See Form PCT/ISA/210 (sheet 2)</b>
FOR FURTHER ACTION See paragraph 2 below		
International application No. <b>PCT/FR2004/002600</b>	International filing date (day/month/year) <b>13.10.2004</b>	Priority date (day/month/year) <b>23.10.2003</b>
International Patent Classification (IPC) or both national classification and IPC <b>F25B21/00</b>		
Applicant <b>MULLER, Christian</b>		

1. This opinion contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the opinion
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/IEP	Authorized officer
Facsimile No.	Telephone No.

Form PCT/ISA/227 (cover sheet) (January 2004)

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/FR2004/002600

Box No. I	Basis of this opinion
1.	<p>With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This opinion has been established on the basis of a translation from the original language into the following language: _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).</p>
2.	<p>With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:</p> <p>a. type of material</p> <p><input type="checkbox"/> a sequence listing</p> <p><input type="checkbox"/> table(s) related to the sequence listing</p> <p>b. format of material</p> <p><input type="checkbox"/> in written format</p> <p><input type="checkbox"/> in computer readable form</p> <p>c. time of filing/furnishing</p> <p><input type="checkbox"/> contained in the international application as filed.</p> <p><input type="checkbox"/> filed together with the international application in computer readable form.</p> <p><input type="checkbox"/> furnished subsequently to this Authority for the purposes of search.</p>
3.	<p><input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</p>
4.	<p>Additional comments:</p>

Form PCT/ISA/237 (Box No. I) (January 2004)

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY		International application No. PCT/FR2004/002600	
Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement			
1. Statement			
Novelty (N)	Claims	1-25	YES
	Claims		NO
Inventive step (IS)	Claims	1-25	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-25	YES
	Claims		NO
2. Citations and explanations:			
<p>Reference is made to the following document in the present notification:</p> <p>D1: WO 03/050456 A (ASTRONAUTICS CORP) 19 June 2003 (2003-06-19)</p> <p>1. Document D1, which is considered to represent the most relevant prior art, describes (see figure 1 and the description of this figure) a device for generating a heat flux with a magnetocaloric material, comprising a one-piece annular chamber defining compartments separated by seals and containing gadolinium.</p> <p>The subject matter of independent claim 1 differs from this known device in that <i>inter alia</i> the displacement means are alternating and designed to displace the magnetic means with respect to the magnetocaloric elements in a reciprocating movement.</p> <p>The subject matter of claim 1 is therefore novel (PCT Article 33(2)).</p>			

Form PCT/ISA/237 (Box No. V) (January 2004)

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/FR2004/002600

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

The problem that the present invention is intended to solve can thus be considered as how to simplify the design of the device.

The solution to this problem, as proposed in claim 1 of the present application, is considered to involve an inventive step (PCT Article 33(3)), for the following reasons:

The simple alternating displacement of the magnetic means makes it possible to simplify the arrangement and to obtain a device of simple design. The system described in document D1 requires a continuous and synchronous rotation of the various rotary seals and of the permanent magnets, making the device technically difficult.

2. Claims 2-25 are dependent on claim 1 and thus also comply, as such, with the requirements of novelty and inventive step of the PCT.